UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
CLAWSON, STEPHEN J

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _17 October 2006_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _21-33_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _21-33_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _17 July 2006_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _7/17/2006_.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2.   Claim 21 and 29 are rejected under 35 U.S.C. 101 because does not claim a tangible result.

Claim 21 selects an initial count value and then compares the predetermined threshold with the difference between the current count values. However, this claim fails to provide a tangible result once the difference is calculated and compared.

Claim 29 selects an initial count value and ten calculates the difference between two consecutive count values but fails to provide a tangible result.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.   Claims 21, 25, 26, 28, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Blaauw (U.S. Patent No. 5617561).

Regarding claim 21, Blaauw teaches a method for the selection by a downstream device of data packets in at least one network connection transmitted by at least one

upstream device in relation to a predetermined threshold of the quantities of data

transmitted through the connection, this method comprising

at the start of a connection, initialization of a transmitted packets counter by the

upstream device to an initial count value, **(Blaauw col. 4, lines 13-18; Blaauw**

discloses a start message that initializes the connection.)

incrementing the said counter by a specified value for each packet transmitted,

defining the current count value of the packet, and copying this current count value into

the packet header block by the upstream device, **(Blaauw col. 6, lines 4-10 Blaauw**

discloses incrementing the sequence number of the sequence number field.

Blaauw also discloses the use of a message sequence number filed within the

packets or messages. Blaauw col. 2, lines 50-55)

reception by the downstream device of a IP packet of a connection,

characterized in that the method comprises

selecting the initial count value at the upstream device from a set of

predetermined initial values such that the difference between two consecutive initial

values in that set is greater than the predetermined threshold, and **(Blaauw col 5, lines**

5-25; Blaauw discloses the calculation of window sizes in the sequence number

due to the finite number of available sequence numbers.)

comparing the predetermined threshold in the downstream device with the

difference between the current count value and the immediately lower initial value in the

set of predetermined initial values. **(Blaauw col. 6, lines 4-10 Blaauw discloses the**

comparison of sequence numbers.)

Regarding claim 25, Blaauw provides a method of selection according to claim

24, characterized in that the predetermined threshold is equal to 2^m-1. **(Blaauw col. 6,**

lines 53-60; Blaauw discloses the use of valid sequence numbers being multiples

of this formula. To properly sample flows, it follows, that the predetermined

threshold must be a multiple of this formula.)

Regarding claim 26, Blaauw teaches a selection method according to claim 25,

characterized in that the initial count values are multiples of 2^m-1. **(Blaauw col. 6, lines**

53-60; Blaauw discloses that the next valid number will be a multiple of this

formula.)

Regarding claim 28, Blaauw teaches a selection method according to claim 27,

characterized in that the number of bits of low weight t is the whole part of the base 2

logarithm of the maximum packet size permitted on the network. **(Blaauw col 4 line 56**

– col 5 line 4; Blaauw discloses that the implementation will be based on base 2

logarithm.)

Regarding claim 29, Blaauw discloses a system for generating connection of a

network data packets, in an upstream device connected to the network, comprising

means for the transmission of packets an information processing unit and storage

means comprising at least one register capable of storing the number of transmitted

packets, the information processing unit comprising means for initializing this register to

an initial count value at the start of the connection **(Blaauw col. 8 lines 40-60; Blaauw**

discloses the use of a processing node comprising a conventional data

processor, including a CPU, memory, I/O, program storage, connecting bus, and

other appropriate components. This would encompass the initialization of

registers.) and means for incrementing the contents of this register whenever a new

packet is created and means for copying this register into a current count value field in

the packet header block, **(Blaauw col. 6, lines 5-10; Blaauw discloses the function**

of a message sequence number which includes copying the number to the

message and generating the next number.) characterized in that the initialization

means comprise means for selecting the initial count value of at least one connection

from a set of predetermined initial values such that the difference between two

consecutive initial values is that set is greater than a predetermined threshold. **(Blaauw**

col 5, lines 5-25; Blaauw discloses the calculation of window sizes in the

sequence number due to the finite number of available sequence numbers.)

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 22-24, 27, and 30-33 are rejected under 35 U.S.C. 103(a) as being

obvious in view of Blaauw (U.S. Patent No. 5617561) and further in view of Estan

(Estan et al. "New Directions in Traffic Measurement and Accounting").

Blaauw teaches the initialization and use of sequence numbers in a

communication system. Blaauw does not disclose the use of sequence numbers in a

flow control system. Estan does. Therefore, it would have been obvious to one of

ordinary skill in the art at the time of the invention to combine sequence numbers with

flow control. The combination creates a more robust network that can quickly detect

and process large flows that create network congestion.

Regarding claim 22, the combination discloses a selection method according to

claim 21, characterized in that the packets corresponding to the connection which have

transmitted less data than the predetermined threshold are selected in preference to the

packets corresponding to connections which have transmitted more data than the

predetermined threshold. **(Estan pg. 2, "Scalable Queue Management"; Estan**

discloses scheduling mechanisms seeking to approximate max-min fairness and

to detect and penalize flows above their fair rate. Examiner interprets these

penalizations as creating a preference for some packets over others based on the

predetermined threshold.)

Regarding claim 23, the combination provides a selection method according to

claim 21, characterized in that when the current count value is presented in the binary

form of a recording of n bits, the set of initial count values is such that a field of l bits of

count value, l always being less than n, is systematically initialized to zero, this field

being positioned in such a way that when the number of transmitted packets reaches

the predetermined threshold at least one bit in this field takes the value of 1. **(Estan**

pg. 3, "3.1 Sample and Hold"; Estan provides a selection method in which

packets are sampled based on a probability function. Once a packet is sampled

the corresponding counter is advanced for every subsequent packet belonging to the flow.)

Regarding claim 24, the combination discloses a selection method according to claim 23, characterized in that if the field of l bits is positioned between a bit of rank m and a bit of rank m+1 in the count value, the initial count values will be greater than 2^{l+m}. **(Estan pg. 3, "3.1 Sample and Hold"; Estan teaches a selection method that utilizes probability and derives the presence of large flows based on a threshold value. Evident from this method is that if a field of l bits ranked between m and m+1 that initial count values will be greater than 2^{l+m}.)**

Regarding claim 27, the combination provides a selection method according to claim 25, characterized in that the bits of low weight in the initial count values are selected randomly from the bits of rank below t, t always being less than m. **(Estan pg. 3 "3.1 Sample and Hold"; Estan provides a sampling method based on probability. It follows that t would have to be less than m to properly sample the flows and avoid errors.)**

Regarding claim 30, the combination teaches a packet generating system according to claim 29, characterized in that if the current count value is in the binary from of a recording of n bits, the set of initial count values is such that a field of l bits of the count value, where l is always smaller than n, is systematically initialized to 0. **(Estan pg. 3, "3.1 Sample and Hold"; Estan provides a selection method in which packets are sampled based on a probability function. Once a packet is sampled**

the corresponding counter is advanced for every subsequent packet belonging to the flow.)

Regarding claim 31, the combination provides a packet generating system according to claim 30, characterized in that the incrementing means comprise means for setting at least one bit in the field of I bits to the value of I when the number of packets transmitted exceeds the predetermined threshold. **(Estan pg. 3, "3.1 Sample and Hold"; Estan provides a selection method in which packets are sampled based on a probability function. Once a packet is sampled the corresponding counter is advanced for every subsequent packet belonging to the flow.)**

Regarding claim 32, the combination discloses a system for the transmission of data packets from at least one connection of a network comprising receiving means for packets originating from upstream device, each packet having a current count value in its header block, characterized in that the information processing means also comprise a table of initial count values and means for calculating the difference between the current count value of the packet received and the initial value in the table immediately below that current count value and means for comparing this difference with a predetermined threshold. **(Estan pg. 3-4, "3.1 Sample and Hold", Figure 1; Estan discloses a router which contains a processor, registers, memory, tables etc.)**

Regarding claim 33, the combination teaches a packet transmission system according to claim 32, characterized in that the means for calculating the difference and comparison with the predetermined threshold make a comparison between a field of I bits of the current count value and zero. **(Estan pg. 3-4, "3.1 Sample and Hold",**

Figure 1; Estan discloses such a system which includes a router which contains a processor, registers, memory, tables etc. which compare data stored in tables and the like, calculate values, and transmit packets to their proper destination.)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN CLAWSON whose telephone number is (571)270-7498. The examiner can normally be reached on M-F 7:30-5:00 pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis West can be reached on 571-272-7859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/STEPHEN CLAWSON/
Examiner, Art Unit 4172

/Lewis G. West/
Supervisory Patent Examiner, Art Unit 4172